# CH2M HILL

# HEALTH AND SAFETY PLAN

*This health and safety plan is provided to address requirements of San Francisco Health Code, Article 31 and the Final Environmental Impact Report (FEIR) mitigation measure 7.E (Construction Contingency Plan) as an example of the activity-specific health and safety plan that will be prepared and submitted by each contractor before starting work on the site, as required in the project bid documents.*

## Contingency Procedures

In the event that unknown hazardous materials not previously identified in this HASP are encountered during the construction process, in addition to the procedures and notifications specified in Section 4 of the HASP, the following notifications will be made by the CH2M HILL project manager:

- Amy Brownell/SFDPH: 415-252-3967 or amy.brownell@sfdph.gov

The *Contingency Plan for the Management of Abrasive Blast Material and Unknown Contaminants* will be implemented, which states the following:

- Work will be stopped
- DPH will be notified
- The area will be secured to prevent access
- The material will be sampled
- The material will be handled and disposed of in compliance with applicable laws and regulations
- Work will resume only after clearance of the area by DPH

This HASP will be updated as necessary to reflect the new conditions encountered.

CH2M HILL FIELD SAFETY INSTRUCTIONS

These Field Safety Instructions (FSI) will be kept onsite during field activities and will be reviewed as necessary. The FSI will be amended or revised as project activities or conditions change or when supplemental information becomes available. The FSI adopts, by reference, the Standards of Practice (SOPs) in the CH2M HILL *Corporate Health and Safety Program, Program and Training Manual*, as appropriate. In addition, these FSI may adopt procedures from the project Work Plan. The Designated Safety Coordinator (DSC) is to be familiar with these SOPs and the content of these instructions. CH2M HILL's personnel and subcontractors must sign Attachment 1.

# Project Information and Description

**PROJECT NO:** 182122.SW.07

**CLIENT:** Lennar Communities

**PROJECT/SITE NAME:** Hunters Point Shipyard (HPS) Parcel A' Phase I Development

**SITE ADDRESS:** Hunters Point Shipyard, San Francisco, CA

**CH2M HILL PROJECT MANAGER:** Phil Burke

**CH2M HILL OFFICE:** Sacramento

**DATE FIELD SAFETY INSTRUCTIONS PREPARED:** 1/24/2005

**DATE(S) OF SITE WORK:** February – June 2005

**SITE SIZE**

75 acres

**SITE TOPOGRAPHY**

Hilly

**PREVAILING WEATHER**

Mild Bay Area Temperatures ranging from 40 degrees to 80 degrees Fahrenheit

**SITE DESCRIPTION AND HISTORY**

Parcel A encompasses approximately 75 acres and is located in the northern portion of the HPS. Currently, approximately 64 buildings are present on Parcel A, 45 of which are former residences. In addition to the 64 buildings, the foundations of 43 former structures are also located in Parcel A. Parcel A contains storm drains, steam lines, a sanitary sewer system, electrical transformers, and an active natural gas distribution system that serves Buildings 915 and 916. Asphalt, buildings, or other structures cover most of the lowlands. Open space at Parcel A is vegetation or bare soil.

Multiple environmental investigations have been performed at HPS Parcel A. Between 1984 and 1993, initial preliminary assessments were conducted facility-wide at HPS. In 1995, the Navy performed a remedial investigation of Parcel A to characterize the nature and extent of chemical contamination in the parcel. United States Environmental Protection Agency, the Department of Toxic Substance Control, and the Regional Water Quality Control Board concurred with the findings of the Parcel A investigations and signed the Parcel A Record of Decision in November 1995. The Parcel A Record of Decision approved by the United States Environmental Protection Agency and co-regulatory agencies is the decision document demonstrating that the Navy has taken all necessary remedial actions to comply with Section 120(h)(3) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980. A final Finding of Suitability to Transfer, which documented completion of the National Environmental Policy Act process, was signed in October 2004. Based on the Finding of Suitability to Transfer, the former housing areas within Parcel A are deemed suitable to transfer to a non-federal entity for unrestricted use as residential housing.

**DESCRIPTION OF SPECIFIC TASKS TO BE PERFORMED BY CH2M HILL:** stormwater sampling, surface soil sampling, air monitoring, and some construction oversight.

CH2M HILL's scope of work is likely to include the following in addition to the stormwater sampling:

- Surface soil sampling for lead-based paint in soil
- Surface soil sampling or bulk sampling (from a stockpile or backhoe bucket) of spent abrasive blast material (which may contain metals or low levels of radioactivity)
- Air sampling (particulates and naturally-occurring asbestos)
- Radiological screening of work areas
- Work around (but not inside) demolition/deconstruction of buildings where LBP and asbestos mitigation is being performed
- Oversight of construction activities (grading, excavation, concrete/rock crushing)

# 1 Project Organization and Responsibilities

## 1.1 Client

Contact Name: Gary McIntyre/Lennar, 415-995-4814
Facility Contact Name: David Wilkins/Lennar
Phone: Office: 415.995.4813 Cell: 707.246.1922

## 1.2 CH2M HILL

Project Manager: Phil Burke/SAC
Health and Safety Manager (HSM): Rick Cavil/SFO
Designated Safety Coordinator (DSC): Tyrone Evans/SJC

The DSC is responsible for verifying that the project is conducted in a safe manner including the following specific obligations:

- Verify these FSI are current and amended when project activities or conditions change
- Verify CH2M HILL site personnel and subcontractor personnel read these FSI and sign Attachment 1 "Employee Signoff Form" prior to commencing field activities
- Verify CH2M HILL site personnel and subcontractor personnel have completed any required specialty training (e.g., fall protection, confined space entry) and medical surveillance as identified in Section 2
- Verify compliance with the requirements of these FSI and applicable subcontractor health and safety plan(s)
- Act as the project "Hazard Communication Coordinator" and perform the responsibilities outlined in Section 2.2.2
- Act as the project "Emergency Response Coordinator" and perform the responsibilities outlined in Section 4
- Post OSHA job-site poster; the poster is required at sites where project field offices, trailers, or equipment-storage boxes are established; posters can be obtained by calling 800/548-4776 or 800/999-9111
- Verify that safety meetings are conducted and documented in the project file initially and as needed throughout the course of the project (e.g., as tasks or hazards change)
- Verify that project H&S forms and permits, found in Attachment 5, are being used as outlined in Section 2
- Verify that project activity self-assessment checklists, found in Attachment 6, are being used as outlined in Section 2

## 1.3 CH2M HILL Subcontractors

(Reference CH2M HILL SOP HS-55, *Subcontractor, Contractor, and Owner*)

Subcontractor: TBD
Subcontractor Contact Name:
Subcontractor Competent Person:
Telephone:
Subcontractor Task(s):

The subcontractors listed above are covered by this FSI and must be provided a copy of this plan. However, these instructions do not address hazards associated with the tasks and equipment that the subcontractor has expertise in (e.g., drilling, excavation work, electrical). Subcontractors are responsible for the health and safety procedures specific to their work, and are required to submit these procedures to CH2M HILL for review before the start of field work. Subcontractors must comply with the established health and safety plan(s). The CH2M HILL DSC should verify that subcontractor employee training, medical clearance, and fit test records are current and must monitor and enforce compliance with the established plan(s). CH2M HILL's oversight does not relieve subcontractors of their responsibility for effective implementation and compliance with the established plan(s).

CH2M HILL should continuously endeavor to observe subcontractors' safety performance. This endeavor should be reasonable, and include observing for hazards or unsafe practices that are both readily observable and occur in common work areas. CH2M HILL is not responsible for exhaustive observation for hazards and unsafe practices. In addition to this level of observation, the DSC is responsible for confirming CH2M HILL subcontractor performance against both the subcontractor's safety plan and applicable self-assessment checklists. Self-assessment checklists contained in Attachment 6 are to be used by the DSC to review subcontractor performance.

Health and safety related communications with CH2M HILL subcontractors should be conducted as follows:

- Brief subcontractors on the provisions of this plan, and require them to sign the Employee Signoff Form included in Attachment 1.
- Request subcontractor(s) to brief project team on the hazards and precautions related to their work.
- When apparent non-compliance/unsafe conditions or practices are observed, notify the subcontractor safety representative and require corrective action – the subcontractor is responsible for determining and implementing necessary controls and corrective actions.
- When repeat non-compliance/unsafe conditions are observed, notify the subcontractor safety representative and stop affected work until adequate corrective measures are implemented.
- When an apparent imminent danger exists, immediately remove all affected CH2M HILL employees and subcontractors, notify subcontractor safety representative, and stop affected work until adequate corrective measures are implemented. Notify the Project Manager and HSM as appropriate.
- Document all oral health and safety related communications in project field logbook, daily reports, or other records.

## 1.4 Contractors

(Reference CH2M HILL SOP HS-55, *Subcontractor, Contractor, and Owner*)

Contractor: TBD
Contractor Contact Name:
Telephone:
Contractor Task(s):

These instructions do not cover contractors that are contracted directly to the client or the owner. CH2M HILL is not responsible for the health and safety or means and methods of the contractor's work, and we must never assume such responsibility through our actions (e.g., advising on H&S issues). In addition to these instructions, CH2M HILL staff should review contractor safety plans so that we remain aware of appropriate precautions that apply to us. Except in unusual situations when conducted by the HSM, CH2M HILL must never comment on or approve contractor safety procedures. In addition to these instructions, CH2M HILL staff unusual situations when conducted by the HSM, CH2M HILL must never comment on or approve contractor safety procedures. Self-assessment checklists contained in Attachment 6 are to be used by the DSC to review the contractor's performance ONLY as it pertains to evaluating our exposure and safety.

Health and safety related communications with contractors should be conducted as follows:

- Request the contractor to brief CH2M HILL employees and subcontractors on the precautions related to the contractor's work.
- When an apparent contractor non-compliance/unsafe condition or practice poses a risk to CH2M HILL employees or subcontractors:
  - Notify the contractor safety representative
  - Request that the contractor determine and implement corrective actions
  - If needed, stop affected CH2M HILL work until contractor corrects the condition or practice. Notify the client, Project Manager, and HSM as appropriate.
- If apparent contractor non-compliance/unsafe conditions or
- When an apparent contractor non-compliance/unsafe condition or practice poses a risk to CH2M HILL employees or subcontractors:
- Notify the contractor safety representative
- Request contractor to determine and implement corrective actions
- If needed, stop affected CH2M HILL work until contractor corrects. Notify the client, Project Manager, and Health and Safety Manager as appropriate.
- If apparent contractor non-compliance/unsafe conditions or practices are observed, inform the contractor safety representative. Our obligation is limited strictly to informing the contractor of our observation – the contractor is solely responsible for determining and implementing necessary controls and corrective actions.
- If an apparent imminent danger is observed, immediately warn the contractor employee(s) in danger and notify the contractor safety representative. Our obligation is limited strictly to immediately warning the affected individual(s) and informing the contractor of our observation – the contractor is solely responsible for determining and implementing necessary controls and corrective actions.
- Document all oral health and safety related communications in project field logbook, daily reports, or other records.

# 2 Hazard Controls

This section provides safe work practices and control measures used to reduce or eliminate potential hazards. These practices and controls are to be implemented by the party in control of either the site or the particular hazard. CH2M HILL employees and subcontractors must remain aware of the hazards affecting them regardless of who is responsible for controlling the hazards. CH2M HILL employees and subcontractors who do not understand any of these provisions should contact the DSC for clarification.

In addition to the controls specified in this section, Project-Activity Self-Assessment Checklists are contained in Attachment 6. These checklists are to be used to assess the adequacy of CH2M HILL and subcontractor site-specific safety requirements. The objective of the self-assessment process is to identify gaps in project safety performance, and prompt for corrective actions in addressing these gaps. Self-assessment checklists should be completed early in the project, when tasks or conditions change, or when otherwise specified by the HSM. The self-assessment checklists, including documented corrective actions, should be made part of the permanent project records, and be promptly submitted to the HSM.

Project-specific frequency for completing self-assessments: Frequency is each and every time work is conducted on the site.

## 2.1 Project-Specific Hazards

The known sources of waste are demolition wastes including regulated asbestos-containing materials and lead-based paint-containing materials. Potential waste sources may also consist of abrasive blast material (ABM), soil containing lead-based paint, and naturally-occurring asbestos-containing material.

In the event that asbestos-containing materials, lead-based paint-containing materials, or ABM are discovered in the soil at the site, on-site work shall stop, and the Lennar Project Manager will be notified. Work will not resume until all of the necessary safety, health, and regulatory requirements have been implemented.

### 2.1.1 Asbestos, Lead, and ABM

The Parcel A HPS site contains a number of old military buildings that will be demolished during Phase I of this project. To accomplish this activity, Lennar will hire a qualified contractor who is licensed and experienced to manage asbestos- and lead-contaminated building materials. The following information has been prepared for general site workers on this project who may be required to work around asbestos- and lead-containing materials or immediately outside areas where asbestos or lead work is being performed.

#### 2.1.1.1 Asbestos

- Materials suspected of containing asbestos shall be treated as asbestos unless documentation and/or testing results indicate otherwise.
- Where the presence of asbestos is suspected, design all operations to avoid contact.
- Do not disturb waste or other materials labeled “Danger - Asbestos Fibers.”
- Do not enter regulated work areas unless training, medical monitoring, and PPE requirements established by the competent person have been met.
- Personnel involved in asbestos inspection or abatement activities must have training and medical surveillance in accordance with applicable United States Environmental Protection Agency (USEPA) (AHERA, 40 CFR 763), Occupational Safety and Health Administration (OSHA) (29 CFR 1926.1101), and all state (8 Code of California Regulations [CCR] 5208) and local guidelines governing the proper abatement, handling, packaging, disposal and the required PPE necessary when handling these materials.

#### 2.1.1.2 Lead

The following requirements pertain to lead abatement activities:

- Work activities involving cutting, grinding, burning, welding, and other abrasive operations performed on any painted and/or coated surfaces should be treated as having an increased potential for lead exposure.
- Surfaces suspected of containing lead shall be treated as lead unless documentation and/or testing results indicate otherwise.

- Do not enter regulated work areas unless training, medical monitoring, and PPE requirements established by the competent person have been met.

The following requirements pertain to lead contaminated soils:

- Work shall progress in a sequence from less contaminated to more contaminated areas.
- Water should be added to soils prior to and during excavation, air rotary drilling, and other activities that create or have the potential to create airborne lead contaminated dust. For air rotary drilling operations, water can be added to the boring to reduce dust generation from the cyclone. Depending upon soil type, watering of soil may be required several days prior to commencing ground intrusive activities.
- Personnel working in the vicinity of lead contaminated soil shall wear disposable coveralls or equal and exercise enhanced personal hygiene (i.e., frequent hand washing prior to eating, drinking, and smoking; separation of work and street clothing/footwear; etc.).

#### 2.1.1.3 Abrasive Blast Material

The following requirements pertain to ABM:

- Work activities involving demolition of existing utilities and mass regrading of the parcel should be treated as having an increased potential for ABM exposure.
- Suspected ABM shall be treated as ABM unless documentation and/or testing results indicate otherwise.
- Do not enter regulated work areas unless training, medical monitoring, and PPE requirements established by the competent person have been met.

### 2.1.2 Exposure to Public Vehicular Traffic

The following precautions must be taken when working around traffic, and in or near an area where traffic controls have been established by a contractor.

- Exercise caution when exiting traveled way or parking along street – avoid sudden stops, use flashers, etc.
- Park in a manner that will allow for safe exit from vehicle, and where practicable, park vehicle so that it can serve as a barrier.
- All staff working adjacent to traveled way or within work area must wear reflective/high-visibility safety vests.
- Eye protection should be worn to protect from flying debris.
- Remain aware of factors that influence traffic related hazards and required controls – sun glare, rain, wind, flash flooding, limited sight-distance, hills, curves, guardrails, width of shoulder (i.e., breakdown lane), etc.
- Always remain aware of an escape route -- behind an established barrier, parked vehicle, guardrail, etc.
- Always pay attention to moving traffic – never assume drivers are looking out for you
- Work as far from traveled way as possible to avoid creating confusion for drivers.
- When workers must face away from traffic, a “buddy system” should be used, where one worker is looking towards traffic.
- When working on highway projects, obtain a copy of the contractor’s traffic control plan.
- Work area should be protected by a physical barrier – such as a K-rail or Jersey barrier.
- Review traffic control devices to ensure that they are adequate to protect your work area. Traffic control devices should: 1) convey a clear meaning, 2) command respect of road users, and 3) give adequate time for proper traffic response. The adequacy of these devices are dependent on limited sight distance, proximity to ramps or intersections, restrictive width, duration of job, and traffic volume, speed, and proximity.
- Either a barrier or shadow vehicle should be positioned a considerable distance ahead of the work area. The vehicle should be equipped with a flashing arrow sign and truck-mounted crash cushion (TMCC). All vehicles within 40 feet of traffic should have an orange flashing hazard light atop the vehicle.
- Except on highways, flaggers should be used when 1) two-way traffic is reduced to using one common lane, 2) driver visibility is impaired or limited, 3) project vehicles enter or exit traffic in an unexpected manner, or 4) the use of a flagger enhances established traffic warning systems.
- Lookouts should be used when physical barriers are not available or practical. The lookout continually watches approaching traffic for signs of erratic driver behavior and warns workers. Vehicles should be parked at least 40 feet away from the work zone and traffic. Minimize the amount of time that you will have your back to oncoming traffic.

### 2.1.3 Demolition (Reference CH2M HILL SOP HS-45, *Demolition*)

- Remain a safe distance from the demolition zone to reduce exposure to fragmentation of glass, steel, masonry, and other debris during demolition operations.
- Do not enter the demolition zone unless completely necessary, and only after the competent person has assessed the condition of the structure and has authorized entry.
- Follow all requirements established by the competent person. The competent person shall inform personnel of the areas that are safe to enter and the areas where entry is prohibited. When possible, the competent person should escort CH2M HILL personnel while in the demolition zone.
- All demolition activities that may affect the integrity of the structure or safety of personnel must cease until personnel have exited the demolition zone.
- Stay as clear as possible of all hoisting operations. Loads shall not be hoisted overhead of personnel.

### 2.1.4 Earthmoving Equipment (Reference CH2M HILL SOP HS-27, *Earthmoving Equipment*)

- Only authorized personnel are permitted to operate earthmoving equipment.
- Maintain safe distance from operating equipment and stay alert of equipment movement. Avoid positioning between fixed objects and operating equipment and equipment pinch points, remain outside of the equipment swing and turning radius. Pay attention to backup alarms, but not rely on them for protection. Never turn your back on operating equipment.
- Approach operating equipment only after receiving the operator's attention. The operator shall acknowledge your presence and stop movement of the equipment. Caution shall be used when standing next to idle equipment; when equipment is placed in gear it can lurch forward or backward. Never approach operating equipment from the side or rear where the operator's vision is compromised.
- When required to work in proximity to operating equipment, wear high-visibility vests to increase visibility to equipment operators. For work performed after daylight hours, vests shall be made of reflective material or include a reflective stripe or panel.
- Do not ride on earthmoving equipment unless it is specifically designed to accommodate passengers. Only ride in seats that are provided for transportation and that are equipped with seat belts.
- Stay as clear as possible of all hoisting operations. Loads shall not be hoisted overhead of personnel.
- Earthmoving equipment shall not be used to lift or lower personnel.
- If equipment becomes electrically energized, personnel shall be instructed not to touch any part of the equipment or attempt to touch any person who may be in contact with the electrical current. The utility company or appropriate party shall be contacted to have line de-energized prior to approaching the equipment.

### 2.1.5 Excavation (Reference CH2M HILL SOP HS-32, *Excavations*)

- Do not enter the excavations unless completely necessary, and only after the competent person has completed the daily inspection and has authorized entry.
- Follow all excavation entry requirements established by the competent person.
- Do not enter excavations where protective systems are damaged or unstable.
- Do not enter excavations where objects or structures above the work location may become unstable and fall into the excavation.
- Do not enter excavations with the potential for a hazardous atmosphere until the air has been tested and found to be at safe levels.
- Do not enter excavations with accumulated water unless precautions have been taken to prevent excavation cave-in.
- H&S Self-Assessment Checklist – Excavations, found in Attachment 5 of this plan, should be used to evaluate excavations prior to entry.

### 2.1.6 Ionizing Radiation

- Do not enter restricted work areas unless training, medical monitoring, personal monitoring equipment, and PPE requirements established by the radiation protection competent person have been met.
- Know your quarterly dose margin and do not exceed your personal limits.
- Assure personal monitoring devices are worn properly. Always calibrate pocket dosimeters prior to entering and exiting restricted areas.

- Plan activities to minimize exposure (ALARA) and waste generation.
- Limit the amount of potential waste (e.g., packaging, boxes, paperwork, etc.) brought into restricted areas.
- Do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in restricted areas.
- Promptly report any condition which may lead to or cause a violation of radiation protection standards.
- Assure radioactive sources, containers, and the area are properly labeled and posted.
- Protective clothing and other exposure controls shall be based on the most recent survey results obtained from the radiation protection competent person.
- Know the emergency evacuation warning signals and be prepared to respond.
- Do not leave radioactive source materials and equipment unattended.

### 2.1.7 Noise Hazards

Previous surveys indicate that heavy equipment such as drilling or excavation equipment may produce continuous and impact noise at or above the action level of 85 dBA. All CH2M HILL personnel within 25 feet of operating equipment, or near an operation that creates noise levels high enough to impair conversation, shall wear hearing protective devices (either muffs or plugs). Personnel will wash their hands with soap and water prior to inserting ear plugs to avoid initiating ear infections. Additional information regarding CH2M HILL's Hearing Conservation Program is located in HS-39 of the CH2M HILL Corporate Health and Safety Program, Program and Training Manual. Access to this document can be easily obtained on the CH2M HILL H&S Intranet Site.

## 2.2 General Hazards

### 2.2.1 General Practices and Housekeeping (Reference CH2M HILL SOP HS-20, *General Practices*)

- Site work should be performed during daylight hours whenever possible. Work conducted during hours of darkness require enough illumination intensity to read a newspaper without difficulty.
- Good housekeeping must be maintained at all times in all project work areas.
- Common paths of travel should be established and kept free from the accumulation of materials.
- Keep access to aisles, exits, ladders, stairways, scaffolding, and emergency equipment free from obstructions.
- Provide slip-resistant surfaces, ropes, and/or other devices to be used.
- Specific areas should be designated for the proper storage of materials.
- Tools, equipment, materials, and supplies shall be stored in an orderly manner.
- As work progresses, scrap and unessential materials must be neatly stored or removed from the work area.
- Containers should be provided for collecting trash and other debris and shall be removed at regular intervals.
- All spills shall be quickly cleaned up. Oil and grease shall be cleaned from walking and working surfaces.

### 2.2.2 Hazard Communication (Reference CH2M HILL SOP HS-05, *Hazard Communication)*

The DSC is to perform the following:

- Complete an inventory of chemicals brought on site by CH2M HILL using Attachment 2.
- Confirm that an inventory of chemicals brought on site by CH2M HILL subcontractors is available.
- Request or confirm locations of Material Safety Data Sheets (MSDSs) from the client, contractors, and subcontractors for chemicals to which CH2M HILL employees potentially are exposed.
- Before or as the chemicals arrive on site, obtain an MSDS for each hazardous chemical.
- Label chemical containers with the identity of the chemical and with hazard warnings, and store properly.
- Give employees who either use or are exposed to hazardous chemicals site-specific HAZCOM training. Refer to guidelines in Attachment 3.
- Store all materials properly, giving consideration to compatibility, quantity limits, secondary containment, fire prevention, and environmental conditions.

### 2.2.3 Shipping and Transportation of Chemical Products

(Reference CH2M HILL's *Procedures for Shipping and Transporting Dangerous Goods)*

Chemicals brought to the site might be defined as hazardous materials by the U.S. Department of Transportation (DOT). All staff who ship the materials or transport them by road must receive CH2M HILL training in shipping

dangerous goods. All hazardous materials that are shipped (e.g., via Federal Express) or are transported by road must be properly identified, labeled, packed, and documented by trained staff. Contact the HSM or the Equipment Coordinator for additional information.

### 2.2.4 Manual Lifting (Reference CH2M HILL, SOP HS-29, *Lifting)*

- Proper lifting techniques must be used when lifting any object.
  - Plan storage and staging to minimize lifting or carrying distances.
  - Split heavy loads into smaller loads.
  - Use mechanical lifting aids whenever possible.
  - Have someone assist with the lift -- especially for heavy or awkward loads.
  - Make sure the path of travel is clear prior to the lift.

### 2.2.5 Fire Prevention (Reference CH2M HILL, SOP HS-22, *Fire Prevention)*

- Fire extinguishers shall be provided so that the travel distance from any work area to the nearest extinguisher is less than 100 feet. When 5 gallons or more of a flammable or combustible liquid is being used, an extinguisher must be within 50 feet. Extinguishers must:
- be maintained in a fully charged and operable condition,
- be visually inspected each month, and
- undergo a maintenance check each year.
- The area in front of extinguishers must be kept clear.
- Post “Exit” signs over exiting doors, and post “Fire Extinguisher” signs over extinguisher locations.
- Combustible materials stored outside should be at least 10 feet from any building.
- Solvent waste and oily rags must be kept in a fire resistant, covered container until removed from the site.
- Flammable/combustible liquids must be kept in approved containers, and must be stored in an approved storage cabinet.

### 2.2.6 Electrical (Reference CH2M HILL, SOP HS-23, *Electrical)*

- Only qualified personnel are permitted to work on unprotected energized electrical systems.
- Only authorized personnel are permitted to enter high-voltage areas.
- Do not tamper with electrical wiring and equipment unless qualified to do so. All electrical wiring and equipment must be considered energized until lockout/tagout procedures are implemented.
- Inspect electrical equipment, power tools, and extension cords for damage prior to use. Do not use defective electrical equipment, remove from service.
- All temporary wiring, including extension cords and electrical power tools, must have ground fault circuit interrupters (GFCIs) installed.
- Extension cords must be:
  - equipped with third-wire grounding.
  - covered, elevated, or protected from damage when passing through work areas.
  - protected from pinching if routed through doorways.
  - not fastened with staples, hung from nails, or suspended with wire.
- Electrical power tools and equipment must be effectively grounded or double-insulated UL approved.
- Operate and maintain electric power tools and equipment according to manufacturers' instructions.
- Maintain safe clearance distances between overhead power lines and any electrical conducting material unless the power lines have been de-energized and grounded, or where insulating barriers have been installed to prevent physical contact. Maintain at least 10 feet from overhead power lines for voltages of 50 kV or less, and 10 feet plus ½ inch for every 1 kV over 50 kV.
- Temporary lights shall not be suspended by their electric cord unless designed for suspension. Lights shall be protected from accidental contact or breakage.
- Protect all electrical equipment, tools, switches, and outlets from environmental elements.

### 2.2.7 Stairways and Ladders (Reference CH2M HILL, SOP HS-25, *Stairways and Ladders)*

- Stairway or ladder is generally required when a break in elevation of 19 inches or greater exists.
- Personnel should avoid using both hands to carry objects while on stairways; if unavoidable, use extra precautions.

- Personnel must not use pan and skeleton metal stairs until permanent or temporary treads and landings are provided the full width and depth of each step and landing.
- Ladders must be inspected by a competent person for visible defects prior to each day's use. Defective ladders must be tagged and removed from service.
- Ladders must be used only for the purpose for which they were designed and shall not be loaded beyond their rated capacity.
- Only one person at a time shall climb on or work from an individual ladder.
- User must face the ladder when climbing; keep belt buckle between side rails
- Ladders shall not be moved, shifted, or extended while in use.
- User must use both hands to climb; use rope to raise and lower equipment and materials
- Straight and extension ladders must be tied off to prevent displacement
- Ladders that may be displaced by work activities or traffic must be secured or barricaded
- Portable ladders must extend at least 3 feet above landing surface
- Straight and extension ladders must be positioned at such an angle that the ladder base to the wall is one-fourth of the working length of the ladder
- Stepladders are to be used in the fully opened and locked position
- Users are not to stand on the top two steps of a stepladder; nor are users to sit on top or straddle a stepladder
- Fixed ladders $\geq$ 24 feet in height must be provided with fall protection devices.
- Fall protection should be considered when working from extension, straight, or fixed ladders greater than six feet from lower levels and both hands are needed to perform the work, or when reaching or working outside of the plane of ladder side rails.

### 2.2.8 Compressed Gas Cylinders

- Valve caps must be in place when cylinders are transported, moved, or stored.
- Cylinder valves must be closed when cylinders are not being used and when cylinders are being moved.
- Cylinders must be secured in an upright position at all times.
- Cylinders must be shielded from welding and cutting operations and positioned to avoid being struck or knock over; contacting electrical circuits; or exposed to extreme heat sources.
- Cylinders must be secured on a cradle, basket, or pallet when hoisted; they may not be hoisted by choker slings.

### 2.2.9 Procedures for Locating Buried Utilities

**Local Utility Mark-Out Service**

Name: TBD
Phone:

- Where available, obtain utility diagrams for the facility.
- Review locations of sanitary and storm sewers, electrical conduits, water supply lines, natural gas lines, and fuel tanks and lines.
- Review proposed locations of intrusive work with facility personnel knowledgeable of locations of utilities. Check locations against information from utility mark-out service.
- Where necessary (e.g., uncertainty about utility locations), excavation or drilling of the upper depth interval should be performed manually
- Monitor for signs of utilities during advancement of intrusive work (e.g., sudden change n advancement of auger or split spoon).
- When the client or other onsite party is responsible for determining the presence and locations of buried utilities, the DSC should confirm that arrangement.

## 2.3 Biological Hazards and Controls

### 2.3.1 Snakes

Snakes typically are found in underbrush and tall grassy areas. If you encounter a snake, stay calm and look around; there may be other snakes. Turn around and walk away on the same path you used to approach the area. If a person is bitten by a snake, wash and immobilize the injured area, keeping it lower than the heart if possible. Seek medical attention immediately. **DO NOT** apply ice, cut the wound, or apply a tourniquet. Try to identify the type of snake: note color, size, patterns, and markings.

### 2.3.2 Poison Ivy, Poison Oak and Poison Sumac

Poison ivy, poison oak, and poison sumac typically are found in brush or wooded areas. They are more commonly found in moist areas or along the edges of wooded areas. Become familiar with the identity of these plants. Wear protective clothing that covers exposed skin and clothes. Avoid contact with plants and the outside of protective clothing. If skin contacts a plant, wash the area with soap and water immediately. If the reaction is severe or worsens, seek medical attention.

### 2.3.3 Ticks

Ticks typically are in wooded areas, bushes, tall grass, and brush. Ticks are black, black and red, or brown and can be up to one-quarter inch in size. Wear tightly woven light-colored clothing with long sleeves and pant legs tucked into boots; spray **only outside** of clothing with permethrin or permanone and spray skin with only DEET; and check yourself frequently for ticks.

If bitten by a tick, grasp it at the point of attachment and carefully remove it. After removing the tick, wash your hands and disinfect and press the bite areas. Save the removed tick. Report the bite to human resources. Look for symptoms of Lyme disease or Rocky Mountain spotted fever (RMSF). Lyme: a rash might appear that looks like a bullseye with a small welt in the center. RMSF: a rash of red spots under the skin 3 to 10 days after the tick bite. In both cases, chills, fever, headache, fatigue, stiff neck, and bone pain may develop. If symptoms appear, seek medical attention.

### 2.3.4 Bees and Other Stinging Insects

Bees and other stinging insects may be encountered almost anywhere and may present a serious hazard, particularly to people who are allergic. Watch for and avoid nests. Keep exposed skin to a minimum. Carry a kit if you have had allergic reactions in the past, and inform the DSC and/or buddy. If a stinger is present, remove it carefully with tweezers. Wash and disinfect the wound, cover it, and apply ice. Watch for allergic reaction; seek medical attention if a reaction develops.

### 2.3.5 Bloodborne Pathogens (Reference CH2M HILL SOP HS-36, *Bloodborne Pathogens*)

Exposure to bloodborne pathogens may occur when rendering first aid or CPR, or when coming into contact with landfill waste or waste streams containing potentially infectious material. Exposure controls and personal protective equipment (PPE) are required as specified in CH2M HILL SOP HS-36, *Bloodborne Pathogens*. Hepatitis B vaccination must be offered before the person participates in a task where exposure is a possibility.

# 3 Personal Protective Equipment (PPE)

(Reference CH2M HILL SOP HS-07, *Personal Protective Equipment and* HS-08, *Respiratory Protection*)

*Note that PPE is required when exposed to the general hazards listed below. Because certain tasks (e.g., welding, energized work, etc.) require specialized PPE, refer to Section 2 for task-specific PPE requirements.*

## PPE Specifications [a]

| Hazard | PPE |
|---|---|
| General entry to active industrial facility or construction site, or when required by client/facility. | ANSI approved steel-toe leather work boots, safety glasses, reflective vest and hardhat. |
| Skin absorption of harmful substances, severe cuts or lacerations, severe abrasions, punctures, chemical burns, thermal burns and harmful temperature extremes. | ANSI approved safety glasses, latex gloves, rubber boots, and Level D modified. |
| Working around heavy equipment or other noisy machinery, or if you must raise your voice to be heard while communicating with persons near you, hearing protection is required. | ANSI approved ear plugs or earmuffs. |
| Danger of foot injuries due to falling or rolling objects, objects piercing the sole, or when the feet are exposed to electrical hazards. | Sturdy footwear or ANSI approved steel-toed leather work boots. |
| Potential for head injury from impact, falling or flying objects. | ANSI approved hardhat. |
| Flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation. | ANSI approved safety glasses with side shield, safety goggles, face shield, or welding glasses. Face shield may be used only in conjunction with the use of other protective eyewear. |

## Reasons for Upgrading or Downgrading Level of Protection

| Upgrade[b] | Downgrade |
|---|---|
| • Request from individual performing tasks. | • Situation is less hazardous than originally thought. |
| • Change in work tasks that will increase potential for injury. | • Change in site conditions that decreases the hazard. |
| • Known or suspected presence of dermal hazards. | • Change in work task that will reduce potential for injury. |

[a] CH2M HILL will provide PPE only to CH2M HILL employees.

[b] Performing tasks that require respiratory protection is permitted only when the PPE requirements have been approved by the HSM, and a DSC qualified at that level is present.

# 4 Emergency Response

(Reference CH2M HILL, SOP HS-12, *Emergency Response*)

## 4.1 Pre-Emergency Planning

The DSC performs the applicable pre-emergency planning tasks before starting field activities and coordinates emergency response with CH2M HILL onsite parties, the facility, and local emergency-service providers as appropriate.

- Review the facility emergency and contingency plans where applicable.
- Determine what onsite communication equipment is available (e.g., two-way radio, air horn).
- Determine what offsite communication equipment is needed (e.g., nearest telephone, cell phone).
- Confirm and post emergency telephone numbers, evacuation routes, assembly areas, and route to hospital; communicate the information to onsite personnel.
- Communicate emergency procedures for personnel injury, exposures, fires, explosions, and releases.
- Field Trailers: Post "Exit" signs above exit doors, and post "Fire Extinguisher" signs above locations of extinguishers. Keep areas near exits and extinguishers clear.
- Designate one vehicle as the emergency vehicle; place hospital directions and map inside; keep keys in ignition during field activities.
- Inventory and check site emergency equipment, supplies, and potable water.

## 4.2 Emergency Equipment and Supplies

The DSC should verify that these supplies are available, as needed, and in proper working order and mark the locations of emergency equipment on the site map, when a map is provided.

| Emergency Equipment and Supplies | Location |
|---|---|
| 20 lb (or two 10-lb) fire extinguisher (A, B, and C classes) | Field Vehicle |
| First aid kit | Field Vehicle |
| Personal Eye wash | Field Vehicle |
| Potable water | Field Vehicle |
| Bloodborne-pathogen kit | Field Vehicle |
| Additional equipment (specify): | Field Vehicle |

## 4.3 Incident Response

In fires, explosions, or chemical releases, actions to be taken include the following:

- Shut down CH2M HILL operations and evacuate the immediate area.
- Notify appropriate response personnel.
- Account for personnel at the designated assembly area(s).
- Assess the need for site evacuation, and evacuate the site as warranted.

Instead of implementing a work-area evacuation, note that small fires or spills posing minimal safety or health hazards may be controlled.

## 4.4 Evacuation Procedures

- Evacuation routes and assembly areas will be designated by the DSC before work begins.
- Personnel will assemble at the assembly area(s) upon hearing the emergency signal for evacuation.
- The DSC and a "buddy" will remain on the site after the site has been evacuated (if safe) to inform local responders of the nature and location of the incident.
- The DSC will account for all personnel at the assembly area.

- The DSC will write up the incident as soon as possible after it occurs and submit a report to the Corporate Director of Health and Safety.

## 4.5 Emergency Medical Treatment

The procedures listed below may also be applied to non-emergency incidents. Injuries and illnesses (including overexposure to contaminants) must be reported to Human Resources. If there is doubt about whether medical treatment is necessary, or if the injured person is reluctant to accept medical treatment, contact the CH2M HILL medical consultant. During non-emergencies, follow these procedures as appropriate.

- Notify appropriate emergency response authorities listed in Attachment 4 (e.g., 911).
- The DSC will assume charge during a medical emergency until the ambulance arrives or until the injured person is admitted to the emergency room.
- Prevent further injury.
- Initiate first aid and CPR where feasible.
- Get medical attention immediately.
- Make certain that the injured person is accompanied to the emergency room.
- When contacting the medical consultant, state that the situation is a CH2M HILL matter, and give your name and telephone number, the name of the injured person, the extent of the injury or exposure, and the name and location of the medical facility where the injured person was taken.
- Report incident as outlined in Section 4.6

## 4.6 Incident Notification and Reporting

- Upon any project incident (fire, spill, injury, near miss, death, etc.), immediately notify the PM and HSM. Call emergency beeper number if HSM is unavailable.
- For CH2M HILL work-related injuries or illnesses, contact and help Human Resources administrator complete an Incident Report Form (IRF). IRF must be completed within 24 hours of incident.
- For CH2M HILL subcontractor incidents, complete the Subcontractor Accident/Illness Report Form and submit to the HSM.
- Notify and submit reports to client as required in contract.

# 5 Approval

This FSI has been written for use by CH2M HILL and their subcontractors only. CH2M HILL claims no responsibility for its use by others unless that use has been specified and defined in project or contract documents. The FSI is written for the specific site conditions, purposes, dates, and personnel specified and must be amended if those conditions change.

## 5.1 Original Plan

**Written By: Tyrone Evans/SJC** **Date: February 10, 2005**

**Approved By: Trish Danby/SAC** **Date: February 10, 2005**

## 5.2 Revisions

**Revisions Made By:** Rick Cavil/SFO **Date: 02/22/2005**

**Revisions to Plan: New SOW hazards added, sections 2.1.2-2.1.7, Section 3 PPE, Attachment 6 Self assessments,**

**Revisions Approved By:** Rick Cavil/SFO **Date: 02/22/2005**

# 6 Attachments

Attachment 1: **Employee Signoff Form – Field Safety Instructions**
Attachment 2: **Project-Specific Chemical Product Hazard Communication Form**
Attachment 3: **Chemical-Specific Training Form**
Attachment 4: **Emergency Contacts**
Attachment 5: **Project H&S Forms/Permits**
Attachment 6: **Project Activity Self-Assessment Checklists**
Attachment 7: **Applicable Material Safety Data Sheets**

CH2MHILL

# EMPLOYEE SIGNOFF FORM

## Field Safety Instructions

The CH2M HILL project employees and subcontractors listed below have been provided with a copy of this FSI, have read and understood it, and agree to abide by its provisions.

**Project Name**: Parcel A Hunters Point Shipyard (HPS) **Project Number:** 182122.SW.07

| **EMPLOYEE NAME** (Please print) | **EMPLOYEE SIGNATURE** | **COMPANY** | **DATE** |
|---|---|---|---|
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CH2MHILL

# Project-Specific Chemical Product Hazard Communication Form

This form must be completed prior to performing activities that expose personnel to hazardous chemicals products. Upon completion of this form, the DSC shall verify that training is provided on the hazards associated with these chemicals and the control measures to be used to prevent exposure to CH2M HILL and subcontractor personnel. Labeling and MSDS systems will also be explained.

**Project Name**: Parcel A Hunters Point Shipyard (HPS) **Project Number:** 182122.SW.07

**MSDSs will be maintained at the following location(s):**

## Hazardous Chemical Products Inventory

| Chemical | Quantity | Location | MSDS Available | Container labels | |
|---|---|---|---|---|---|
| | | | | Identity | Hazard |
| | | | | | |
| | | | | | |
| | | | | |

CH2MHILL

# CHEMICAL-SPECIFIC TRAINING FORM

| | |
|---|---|
| Location: | Project # : 182122.SW.07 |
| HCC: | Trainer: |

**TRAINING PARTICIPANTS:**

| NAME | SIGNATURE | NAME | SIGNATURE |
|---|---|---|---|
| | | | |
| | | | |
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**REGULATED PRODUCTS/TASKS COVERED BY THIS TRAINING:**

| | |
|---|---|
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The HCC shall use the product MSDS to provide the following information concerning each of the products listed above.

☐ Physical and health hazards

☐ Control measures that can be used to provide protection (including appropriate work practices, emergency procedures, and personal protective equipment to be used)

☐ Methods and observations used to detect the presence or release of the regulated product in the workplace (including periodic monitoring, continuous monitoring devices, visual appearance or odor of regulated product when being released, etc.)

Training participants shall have the opportunity to ask questions concerning these products and, upon completion of this training, will understand the product hazards and appropriate control measures available for their protection.

Copies of MSDSs, chemical inventories, and CH2M HILL's written hazard communication program shall be made available for employee review in the facility/project hazard communication file.

## Emergency Contacts

### 24-hour CH2M HILL Emergency Beeper – 888/444-1226

**Medical Emergency – 911**
Local Ambulance #:

**CH2M HILL Medical Consultant**
Health Resources
Dr. Jerry H. Berke, M.D., M.P.H.
600 West Cummings Park, Suite 3400
Woburn, MA 01801-6350
1-800-350-4511 (8 am to 11 pm EST)
1-800-978-7003 (after hours and on weekends)
(After hours calls will be returned within 20 minutes)

**Fire/Spill Emergency -- 911**
Local Fire Dept #: (415) 558-3200

**Corporate Director Health, Safety & Environment**
Name: Dave Waite/SEA
Phone: 425/453-5000
**24-hour emergency beeper: 888-444-1226**

**Security & Police – 911**
Local Police #: (415) 553-0123

**Regional Health & Safety Program Manager (RHSPM)**
Name: Trish Danby/SAC
Phone: 916/920-0212 ext. 287
Or
Name: Rick Cavil/SFO
Phone: (510) 251-2426 ext. 7502

**Designated Safety Coordinator (DSC)**
Name: Tyrone Evans
Phone: (408) 910-5606

**Regional Human Resources Department**
Name: Lisa Covey/SAC
Phone: 916/920-0212 ext. 254

**Project Manager**
Name: Phil Burke
Phone: (510) 587-7689

**Corporate Human Resources Department**
Name: Pete Hannan/COR
Phone: 720-286-3077

**Federal Express Dangerous Goods Shipping**
Phone: 800/238-5355

**CH2M HILL Emergency Number for Shipping Dangerous Goods**
Phone: 800/255-3924

**Worker's Compensation:**
Contact Regional HR dept. to have form completed or contact Julie Zimmerman after hours: 303/664-3304

**Automobile Accidents:**
Rental: Carol Dietz/COR 303/713-2757
CH2M HILL owned vehicle:
Zurich Insurance Co. 800/987-3373

Contact the PM. Generally, the PM will contact relevant government agencies.

**Facility Alarms:**

**Evacuation Assembly Area(s):**

**Facility/Site Evacuation Route(s):**

**Hospital Name/Address:**
San Francisco General Hospital Medical Center
1001 Potrero Ave, San Francisco, CA. 94110

**Hospital Phone #:** (415) 206-8000

### Directions to Hospital

1. Start out going Northwest on INNES Ave towards MILTON I ROSS LN
2. Turn LEFT onto MILTON I ROSS LN. - <0.10
3. Turn RIGHT onto JERROLD AVE. - 0.3
4. JERROLD AVE becomes BAY SHORE BLVD. - <0.1
5. Turn SLIGHT RIGHT onto POTRERO AVE. - 0.6
6. End at 1001 POTRERO AVE SAN FRANCISCO CA

# CH2M HILL FIELD SAFETY INSTRUCTIONS

**Attachment 5**

## Project H&S Forms and Permits

# CH2M HILL FIELD SAFETY INSTRUCTIONS

**Attachment 6**

## Project Activity Self-Assessment Checklists

CH2MHILL

**H&S Self-Assessment Checklist—Asbestos** 

This checklist shall be used by CH2M HILL personnel **only** and shall be completed at the frequency specified in the project's HSP/FSI.

This checklist is to be used at locations where: 1) CH2M HILL employees are exposed to asbestos hazards and/or 2) CH2M HILL provides oversight of subcontractor personnel who are engaged in asbestos operations.

SSC or DSC may consult with subcontractors when completing this checklist, but shall not direct the means and methods of asbestos operations nor direct the details of corrective actions. Subcontractors shall determine how to correct deficiencies and we must carefully rely on their expertise. Items considered to be imminently dangerous (possibility of serious injury or death) shall be corrected immediately or all exposed personnel shall be removed from the hazard until corrected.

Completed checklists shall be sent to the HS&E Staff for review.

Project Name: _____ Project No.: _____

Location: _____ PM: _____

Auditor: _____ Title: _____ Date: _____

This specific checklist has been completed to:

☐ Evaluate CH2M HILL employee exposure to asbestos hazards
☐ Evaluate a CH2M HILL subcontractor's compliance with the asbestos standard and its requirements
Subcontractors Name: _____

- Check "Yes" if an assessment item is complete/correct.
- Check "No" if an item is incomplete/deficient. Deficiencies shall be brought to the immediate attention of the subcontractor. Section 3 must be completed for all items checked "No."
- Check "N/A" if an item is not applicable.
- Check "N/O" if an item is applicable but was not observed during the assessment.

Numbers in parentheses indicate where a description of this assessment item can be found in Standard of Practice HS-42.

**SECTION 1**

**PERSONNEL SAFE WORK PRACTICES (3.1)**

| | | Yes | No | N/A | N/O |
|---|---|---|---|---|---|
| 1. | An asbestos inspection has been conducted on buildings built before 1980. | ☐ | ☐ | ☐ | ☐ |
| 2. | When an inspection has not been conducted, TSI will be designated PCAM. | ☐ | ☐ | ☐ | ☐ |
| 3. | Areas, which exceed the PEL, have been designated as regulated areas. | ☐ | ☐ | ☐ | ☐ |
| 4. | A visual inspection of the area has been conducted to assure control of migration of ACM. | ☐ | ☐ | ☐ | ☐ |
| 5. | No Eating, drink, and/or smoking are allowed in the regulated areas. | ☐ | ☐ | ☐ | ☐ |

- Warning signs have been posted at all entrances to the regulated areas. ☐ ☐ ☐ ☐
- Selection of PPE is based on exposure monitoring data or the competent person. ☐ ☐ ☐ ☐

| SECTION 2 | Yes | No | N/A | N/O |
|---|---|---|---|---|
| **EXPOSURE ASSESSMENTS (3.2.2)** | | | | |
| 8. Initial air monitoring (PEL and EL) has been conducted. | ☐ | ☐ | ☐ | ☐ |
| 9. The initial assessment was conducted prior to or at the initiation of fieldwork. | ☐ | ☐ | ☐ | ☐ |
| 10. The selection of controls has been based on the results of the exposure assessment. | ☐ | ☐ | ☐ | ☐ |
| 12. All Class I work is assumed to be above the EL and PEL until actually monitored. | ☐ | ☐ | ☐ | ☐ |
| 13. Daily air monitoring samples are collected during Class I and II activities. | ☐ | ☐ | ☐ | ☐ |
| 14. Periodic monitoring is required during Class III and IV activities. | ☐ | ☐ | ☐ | ☐ |
| 15. Air monitoring suspended only when results indicated exposures below the PEL and EL. | ☐ | ☐ | ☐ | ☐ |

- Additional air monitoring when change in work practices, personnel, or controls. ☐ ☐ ☐ ☐

| | | | | |
|---|---|---|---|---|
| **COMMUNICATION OF HAZARDS (3.2.3)** | | | | |
| 17. Training on the Hazard Communication Standard has been met. | ☐ | ☐ | ☐ | ☐ |
| 18. Notify building owners of the installation of ACM. | ☐ | ☐ | ☐ | ☐ |
| 19. Danger labels affixed to waste containers. | ☐ | ☐ | ☐ | ☐ |
| 20. Danger (Warning signs) posters placed at all entrances and approaches to regulated areas. | ☐ | ☐ | ☐ | ☐ |
| 21. Owners, contractors, and workers in adjacent areas have been notified of ACM work. | ☐ | ☐ | ☐ | ☐ |
| **CONTROL METHODS (3.2.4)** | | | | |
| 22. No smoking policy in place and enforced | ☐ | ☐ | ☐ | ☐ |
| 23. All vacuums are equipped with HEPA filters | ☐ | ☐ | ☐ | ☐ |
| 24. When working with ACM, wet methods are employed. | ☐ | ☐ | ☐ | ☐ |
| 25. Debris is promptly cleaned up. | ☐ | ☐ | ☐ | ☐ |
| 26. Local exhaust ventilation is equipped with HEPA filtration | ☐ | ☐ | ☐ | ☐ |
| 27. Use of enclosures or isolation to control ACM dust. | ☐ | ☐ | ☐ | ☐ |
| 28 Airflow is directed away from personal breathing zones. | ☐ | ☐ | ☐ | ☐ |
| 29. High-speed disc saws are not used without HEPA enclosures. | ☐ | ☐ | ☐ | ☐ |
| 30. Compressed air is not used to remove ACM. | ☐ | ☐ | ☐ | ☐ |
| 31. Dry sweeping is not used to collect ACM debris. | ☐ | ☐ | ☐ | ☐ |

- Employee rotation is not used to control personal exposures. ☐ ☐ ☐ ☐
- Class I and II work is supervised by a competent person. ☐ ☐ ☐ ☐
- Critical barriers have been placed over all openings to the regulated area. ☐ ☐ ☐ ☐
- HVAC systems are isolated with two layers of 6-mil plastic. ☐ ☐ ☐ ☐
- Impermeable drop cloths are placed beneath all removal activities. ☐ ☐ ☐ ☐
- Objects not removed are covered by impermeable drop cloths. ☐ ☐ ☐ ☐
- Negative pressure enclosures, glovebags, and mini-enclosures are used to control Class I work. ☐ ☐ ☐ ☐
- Sanding is not conducted on the backing of vinyl or asphalt flooring. ☐ ☐ ☐ ☐
- Resilient sheeting is removed by wet methods. ☐ ☐ ☐ ☐
- Residual adhesives are removed with wet methods. ☐ ☐ ☐ ☐

- HEPA vacuums are used to clean the floors. ☐ ☐ ☐ ☐
- Mechanical chipping is allowed only within negative pressure enclosures. ☐ ☐ ☐ ☐
- Floor backing and mastic are assumed to contain ACM when the resilient floor is ACM. ☐ ☐ ☐ ☐
- Roofing material is removed in an intact state. ☐ ☐ ☐ ☐
- When roofing materials cannot be removed intact wet methods are used. ☐ ☐ ☐ ☐
- Cutting machines are continuously misted. ☐ ☐ ☐ ☐
- Dust resulting from power cutting of felt is collected by a HEPA vacuum. ☐ ☐ ☐ ☐
- All debris is kept wet and immediately placed into impermeable bags or containers. ☐ ☐ ☐ ☐
- Debris is lowered to the ground by dust tight chutes, crane, or hoist. ☐ ☐ ☐ ☐
- All unwrapped debris lowered to the ground is immediately placed in containers. ☐ ☐ ☐ ☐
- All roof mounted HVAC unit intakes are isolated or shutdown during ACM removal. ☐ ☐ ☐ ☐
- CAB or transite panels are not cut, abraded, or broken during removal. ☐ ☐ ☐ ☐
- Panels are sprayed with amended water prior to removal. ☐ ☐ ☐ ☐
- Nail heads are cut off with sharp instruments. ☐ ☐ ☐ ☐
- Visibly deteriorated gaskets are removed with glovebags. ☐ ☐ ☐ ☐
- Once gaskets are removed they are placed in disposal containers. ☐ ☐ ☐ ☐
- When scrapping is used to remove the gaskets, wet methods are used. ☐ ☐ ☐ ☐



| SECTION 2 | Yes | No | N/A | N/O |
|---|---|---|---|---|
| **PERSONAL PROTECTIVE EQUIPMENT (3.2.5)** | | | | |
| 62. Respirators are used in areas above the PEL. | ☐ | ☐ | ☐ | ☐ |
| 63. The selection of the appropriate respirator is based on the airborne asbestos concentration. | ☐ | ☐ | ☐ | ☐ |
| 64. PPE is supplied by the employer to the employees | ☐ | ☐ | ☐ | ☐ |
| 65. PAPRs have been made available to employees who request them. | ☐ | ☐ | ☐ | ☐ |
| 66. Clothing to be laundered is labeled with "Caution" signs. | ☐ | ☐ | ☐ | ☐ |
| 67. Businesses and personnel laundering contaminated clothing have been informed of the hazards. | ☐ | ☐ | ☐ | ☐ |
| **DECONTAMINATION (3.2.6)** | | | | |

| | | | | |
|---|---|---|---|---|
| 68. A decontamination areas has been established for Class I work. | ☐ | ☐ | ☐ | ☐ |
| 69. The decon area consists of an equipment room, shower, and change area. | ☐ | ☐ | ☐ | ☐ |
| 70. Contaminated clothing is disposed of in the equipment area. | ☐ | ☐ | ☐ | ☐ |
| 71. Work clothing is HEPA vacuumed prior to removal in the equipment area. | ☐ | ☐ | ☐ | ☐ |
| 72. Personnel are supplied lockers or storage containers in the change area. | ☐ | ☐ | ☐ | ☐ |
| 73. Decontamination procedures have been established. | ☐ | ☐ | ☐ | ☐ |
| 74. A lunch area is provided outside the regulated area. | ☐ | ☐ | ☐ | ☐ |
| 74. The decontamination area for small Class I and II work consists of an equipment area. | ☐ | ☐ | ☐ | ☐ |
| 75. The floor of the equipment area is covered with an impermeable drop cloth. | ☐ | ☐ | ☐ | ☐ |
| 76. The equipment area is large enough to accommodate removal of PPE and equipment cleaning. | ☐ | ☐ | ☐ | ☐ |
| 78. Work clothing is HEPA vacuumed prior to removal in the equipment area. | ☐ | ☐ | ☐ | ☐ |

**SECTION 3**

Complete this section for all items checked "No" in Sections 1 or 2. Deficient items must be corrected in a timely manner.

| Item # | Corrective Action Planned/Taken | Date Corrected |
|---|---|---|
| | | |
| | | |
| | | |

This checklist shall be used by CH2M HILL personnel **only** and shall be completed at the frequency specified in the project's HSP/FSI.

This checklist is to be used at locations where: 1) CH2M HILL employees are exposed to lead operations and/or 2) CH2M HILL provides oversight of subcontractor personnel who are exposed to lead operations.

SSC or DSC may consult with subcontractors when completing this checklist, but shall not direct the means and methods of lead operations nor direct the details of corrective actions. Subcontractors shall determine how to correct deficiencies and we must carefully rely on their expertise. Items considered to be imminently dangerous (possibility of serious injury or death) shall be corrected immediately or all exposed personnel shall be removed from the hazard until corrected.

Completed checklists shall be sent to the HS&E Staff for review.

Project Name: _____ Project No.: _____

Location: _____ PM: _____

Auditor: _____ Title: _____ Date: _____

This specific checklist has been completed to:

☐ Evaluate CH2M HILL employee exposure to lead hazards
☐ Evaluate a CH2M HILL subcontractor's compliance with the lead standard and its requirements
Subcontractors Name: _____

- Check "Yes" if an assessment item is complete/correct.
- Check "No" if an item is incomplete/deficient. Deficiencies shall be brought to the immediate attention of the subcontractor. Section 3 must be completed for all items checked "No."
- Check "N/A" if an item is not applicable.
- Check "N/O" if an item is applicable but was not observed during the assessment.

Numbers in parentheses indicate where a description of this assessment item can be found in Standard of Practice HS-57.

**SECTION 1**

| **PERSONNEL SAFE WORK PRACTICES (3.1)** | **Yes** | **No** | **N/A** | **N/O** |
|---|---|---|---|---|
| 1. Work activities identified where there is a potential for lead exposure. | ☐ | ☐ | ☐ | ☐ |
| 2. Surfaces tested where lead may be present. | ☐ | ☐ | ☐ | ☐ |
| 3. Regulated areas have been identified and marked. | ☐ | ☐ | ☐ | ☐ |
| 4. Personnel entering into regulated areas have been trained and medically qualified. | ☐ | ☐ | ☐ | ☐ |
| 5. No eating, drinking, smoking, chewing, or applying cosmetics in regulated areas. | ☐ | ☐ | ☐ | ☐ |
| 6. Respiratory protection and other controls selected as per direction of competent person. | ☐ | ☐ | ☐ | ☐ |
| 7. Work in lead-contaminated soil progresses from areas of less contamination to more | ☐ | ☐ | ☐ | ☐ |
| 8. Water is added to soil prior to and during ground intrusive work to minimize dust generation | ☐ | ☐ | ☐ | ☐ |
| 9. Personnel in vicinity of ground intrusive activities are wearing disposable coveralls or equal | ☐ | ☐ | ☐ | ☐ |
| 10. Personnel exercising enhanced personal hygiene near contaminated soil operations | ☐ | ☐ | ☐ | ☐ |

**SECTION 2**

| | Yes | No | N/A | N/O |
|---|---|---|---|---|
| **EXPOSURE ASSESSMENTS (3.2.2)** | | | | |
| 11. The exposure assessment has been completed. | ☐ | ☐ | ☐ | ☐ |
| 12. Air monitoring data supporting the exposure data is available. | ☐ | ☐ | ☐ | ☐ |
| 13. PPE is appropriate for the type of activity and concentration. | ☐ | ☐ | ☐ | ☐ |
| 14. Personnel have been provided PPE, hygiene facilities, biological monitoring, and training during initial exposure determination. | ☐ | ☐ | ☐ | ☐ |
| 15. An assessment has been conducted for each process, personnel, or control. | ☐ | ☐ | ☐ | ☐ |
| 16. New assessment conducted when a change occurs in process, personnel, or controls. | ☐ | ☐ | ☐ | ☐ |
| 17. Air monitoring results above the AL but below the PEL have been sampled in the last 6 months. | ☐ | ☐ | ☐ | ☐ |
| 18. Air monitoring results above the PEL have been sampled in the last 3 months. | ☐ | ☐ | ☐ | ☐ |

- The exposure assessment based on theoretical calculations, historical data, or other information has been verified. ☐ ☐ ☐ ☐

| | | | | |
|---|---|---|---|---|
| **COMMUNICATION OF HAZARDS (3.2.3)** | | | | |
| 20. Training on the Hazard Communication Standard has been met. | ☐ | ☐ | ☐ | ☐ |
| 21. The Written Compliance Program is available. | ☐ | ☐ | ☐ | ☐ |
| 22. Warning Signs have been posted in areas above the PEL | ☐ | ☐ | ☐ | ☐ |
| 23. Notification of owners, tenants, and contractors has been made. | ☐ | ☐ | ☐ | ☐ |
| **CONTROL METHODS (3.2.4)** | | | | |
| 24. Engineering and work practices are implemented in areas at or above the PEL. | ☐ | ☐ | ☐ | ☐ |
| 25. The mechanical ventilation has been assessed to control lead exposures. | ☐ | ☐ | ☐ | ☐ |
| 26. Where administrative controls are used, a job rotation schedule has been implemented. | ☐ | ☐ | ☐ | ☐ |
| 27. A written compliance program is established and implemented. | ☐ | ☐ | ☐ | ☐ |
| 28. All surfaces are clean of lead dust accumulation. | ☐ | ☐ | ☐ | ☐ |
| 29. Vacuums are equipped with HEPA filters. | ☐ | ☐ | ☐ | ☐ |
| 30 Compressed air is not used to remove lead or control lead dust. | ☐ | ☐ | ☐ | ☐ |
| 31. Employees not allowed to eat, drink, or smoke in regulated areas. | ☐ | ☐ | ☐ | ☐ |
| 32. Change areas are available when regulated areas are in use. | ☐ | ☐ | ☐ | ☐ |
| 33. PPE used in lead operations not worn by employees off the worksite. | ☐ | ☐ | ☐ | ☐ |
| 34. Personal hygiene facilities (showers and wash facilities) are available in areas above the PEL. | ☐ | ☐ | ☐ | ☐ |
| 35. Employees required to wash hands and face at end of shift and prior to eating, smoking, etc. | ☐ | ☐ | ☐ | ☐ |
| 36. Eating facilities, free of lead contamination, provided and readily accessible. | ☐ | ☐ | ☐ | ☐ |
| **PERSONAL PROTECTIVE EQUIPMENT (3.2.5)** | | | | |
| 37. Respirators are used in areas at or above the PEL. | ☐ | ☐ | ☐ | ☐ |
| 38. The selection of the appropriate respirator is based on the airborne lead concentration. | ☐ | ☐ | ☐ | ☐ |
| 39. All other required PPE (coveralls, gloves, goggles, etc) and equipment provided to employees. | ☐ | ☐ | ☐ | ☐ |

- PAPRs have been made available to employees who request them. ☐ ☐ ☐ ☐
- Clean & dry protective clothing provided weekly; daily to employees exposed over 200 µg/m$^3$ ☐ ☐ ☐ ☐
- Clothing to be laundered is labeled with "Caution" signs. ☐ ☐ ☐ ☐
- Businesses and personnel laundering contaminated clothing have been informed of lead hazard. ☐ ☐ ☐ ☐

**SECTION 3**

Complete this section for all items checked "No" in Sections 1 or 2. Deficient items must be corrected in a timely manner.

| Item # | Corrective Action Planned/Taken | Date Corrected |
|---|---|---|
| | | |
| | | |
| | | |

CH2MHILL

## H&S Self-Assessment Checklist - DEMOLITION



This checklist shall be used by CH2M HILL personnel **only** and shall be completed at the frequency specified in the project's HSP/FSI.

This checklist is to be used at locations where: 1) CH2M HILL employees are potentially exposed to hazards associated with demolition operations (complete Sections 1 and 3), and/or 2) CH2M HILL oversight of a demolition subcontractor is required (complete entire checklist).

SSC/DSC may consult with demolition subcontractors when completing this checklist, but shall not direct the means and methods of demolition operations nor direct the details of corrective actions. Demolition subcontractors shall determine how to correct deficiencies and we must carefully rely on their expertise. Items considered to be imminently dangerous (possibility of serious injury or death) shall be corrected immediately or all exposed personnel shall be removed from the hazard until corrected.

Completed checklists shall be sent to the health and safety manager for review.

Project Name: _____ Project No.: _____

Location: _____ PM: _____

Auditor: _____ Title: _____ Date: _____

This specific checklist has been completed to:

☐ Evaluate CH2M HILL employee exposures to demolition hazards
☐ Evaluate a CH2M HILL subcontractor's compliance with demolition H&S requirements
Subcontractors Name: _____

- Check "Yes" if an assessment item is complete/correct.
- Check "No" if an item is incomplete/deficient. Deficiencies shall be brought to the immediate attention of the demolition subcontractor. Section 3 must be completed for all items checked "No."
- Check "N/A" if an item is not applicable.
- Check "N/O" if an item is applicable but was not observed during the assessment.

Numbers in parentheses indicate where a description of this assessment item can be found in Standard of Practice HS-45.

| SECTION 1 | Yes | No | N/A | N/O |
|---|---|---|---|---|
| **PERSONNEL SAFE WORK PRACTICES (3.1)** | | | | |
| 1. Personnel remain safe distance from demolition zone (DZ) during demolition | ☐ | ☐ | ☐ | ☐ |
| 2. Personnel entering DZ, only when completely necessary | ☐ | ☐ | ☐ | ☐ |
| 3. Prior to DZ entry, competent person has evaluated structure and authorized entry | ☐ | ☐ | ☐ | ☐ |
| 4. Personnel aware of entry requirements established by the competent person | ☐ | ☐ | ☐ | ☐ |
| 5. Competent person escorts CH2M HILL personnel during DZ entry, when possible | ☐ | ☐ | ☐ | ☐ |
| 6. Personnel removed from DZ prior to activities that could affect structural integrity or safety | ☐ | ☐ | ☐ | ☐ |
| 7. Personnel not positioned under hoisted loads | ☐ | ☐ | ☐ | ☐ |
| 8. Personnel wearing appropriate PPE, per HSP/FSI | ☐ | ☐ | ☐ | ☐ |

**SECTION 2**

| | Yes | No | N/A | N/O |
|---|---|---|---|---|
| **PLANNING ACTIVITIES (2.6)** | | | | |
| 9. Demolition permit completed and submitted, as required | ☐ | ☐ | ☐ | ☐ |
| 10. Competent person completed engineering survey, available on site | ☐ | ☐ | ☐ | ☐ |
| 11. Regulated hazardous substances removed prior to demolition | ☐ | ☐ | ☐ | ☐ |
| 12. Hazardous materials purged from tanks, pipes, and equipment | ☐ | ☐ | ☐ | ☐ |
| 13. Utility service lines shut off, capped, or otherwise controlled, utilities notified | ☐ | ☐ | ☐ | ☐ |
| 14. Utilities needed for demolition temporary relocated and protected | ☐ | ☐ | ☐ | ☐ |
| **GENERAL (3.2.1)** | | | | |
| 15. Daily safety briefing/meeting conducted with crew | ☐ | ☐ | ☐ | ☐ |
| 16. Daily inspection of demolition equipment conducted before use | ☐ | ☐ | ☐ | ☐ |
| 17. Competent person inspecting DZ for hazards as work progresses | ☐ | ☐ | ☐ | ☐ |
| 18. Competent person controls entry into DZ, unauthorized entry prohibited | ☐ | ☐ | ☐ | ☐ |
| 19. Multi-story structures provided with adequate canopy over entrances | ☐ | ☐ | ☐ | ☐ |
| 20. Demolition starts at top of structure and proceeds downward | ☐ | ☐ | ☐ | ☐ |
| 21. Fire extinguisher available at demolition area | ☐ | ☐ | ☐ | ☐ |
| **PROTECTION OF THE PUBLIC (3.2.2)** | | | | |
| 22. Demo work not performed in any area occupied by the public, unless permitted by contract | ☐ | ☐ | ☐ | ☐ |
| 23. Overhead protection provided for pedestrian traveled sidewalks | ☐ | ☐ | ☐ | ☐ |
| 24. Walking surfaces kept free of obstructions | ☐ | ☐ | ☐ | ☐ |
| 25. Standard guardrails provided on pedestrian bridges, ramps, runways, and platforms | ☐ | ☐ | ☐ | ☐ |
| 26. Signs posted informing pedestrians of hazards | ☐ | ☐ | ☐ | ☐ |
| 27. Temporary fence provided around perimeter of DZ adjacent to public areas | ☐ | ☐ | ☐ | ☐ |
| 28. Watch placed at openings when DZ barricades temporarily removed | ☐ | ☐ | ☐ | ☐ |
| 29. Warning lights provide around DZ hazards at night, walkways adequately illuminated | ☐ | ☐ | ☐ | ☐ |
| **WORK AREA PROTECTION (3.2.3)** | | | | |
| 30. Wall openings protected by guardrail 42" high | ☐ | ☐ | ☐ | ☐ |
| 31. Fall protection provide for fall hazards 6' or greater | ☐ | ☐ | ☐ | ☐ |
| 32. Adequate barricades and signs provided when debris dropped through floor openings | ☐ | ☐ | ☐ | ☐ |
| 33. Floor opening, not used as material drops, adequately covered | ☐ | ☐ | ☐ | ☐ |
| 34. Signs, barricades, flagging used to warn personnel of hidden hazards | ☐ | ☐ | ☐ | ☐ |
| 35. Glass removed from structure, or personnel protected from fragments | ☐ | ☐ | ☐ | ☐ |
| 36. Damaged structure's walls and floors shored and braced | ☐ | ☐ | ☐ | ☐ |
| 37. All DZ accessways not meant to be accessed closed at all times | ☐ | ☐ | ☐ | ☐ |
| 38. Multi-story structure stairways adequately covered and illuminated | ☐ | ☐ | ☐ | ☐ |
| 39. DZ areas adequately illuminated | ☐ | ☐ | ☐ | ☐ |
| 40. Protruding reinforcing steel is covered or protected when personnel work above it | ☐ | ☐ | ☐ | ☐ |
| **MANUAL REMOVAL OF WALLS AND MASONRY (3.2.4)** | | | | |
| 41. Walls not permitted to fall on floors exceeding their carrying capacity | ☐ | ☐ | ☐ | ☐ |
| 42. Walls greater than one story not free standing unless originally designed to stand alone | ☐ | ☐ | ☐ | ☐ |
| 43. Personnel not working on walls during inclement weather | ☐ | ☐ | ☐ | ☐ |
| 44. Load-supporting members not cut until above floors demolished and removed | ☐ | ☐ | ☐ | ☐ |
| 45. Floor openings within 10' of walls are planked unless personnel removed from below | ☐ | ☐ | ☐ | ☐ |
| 46. Masonry debris removed from steel left in place as masonry demo progresses | ☐ | ☐ | ☐ | ☐ |
| 47. Walkways/ladders provided to safely reach scaffolds and walls | ☐ | ☐ | ☐ | ☐ |
| 48. Retaining walls removed only after supported material removed or secured | ☐ | ☐ | ☐ | ☐ |

**SECTION 2 (continued)**

| | Yes | No | N/A | N/O |
|---|---|---|---|---|
| **MANUAL REMOVAL OF FLOORS (3.2.5)** | | | | |
| 49. Debris removed from floor arches prior to arch demolition | ☐ | ☐ | ☐ | ☐ |
| 50. Plank walkways 18" or greater provided for access across demolished floors | ☐ | ☐ | ☐ | ☐ |
| 51. Planks overlap 1' and laid over solid bearings | ☐ | ☐ | ☐ | ☐ |
| 52. Areas under floor arch demolition barricaded and personnel removed | ☐ | ☐ | ☐ | ☐ |
| **DEMOLITION USING HEAVY EQUIPMENT OR CRANES (3.2.6)** | | | | |
| 53. Personnel removed from DZ during use of mechanical equipment | ☐ | ☐ | ☐ | ☐ |
| 54. Mechanical equipment positioned on floors capable of supporting imposed loads | ☐ | ☐ | ☐ | ☐ |
| 55. Working surface edges provided with curbs or stop-logs | ☐ | ☐ | ☐ | ☐ |
| 56. Heavy equipment operated safely (use earthmoving equipment checklist in HS-27) | ☐ | ☐ | ☐ | ☐ |
| 57. Roof stonework and steel members cut free prior to wall demo | ☐ | ☐ | ☐ | ☐ |
| 58. Demo ball weight appropriate for crane's rated load and line strength | ☐ | ☐ | ☐ | ☐ |
| 59. Crane boom and loadline is as short as possible | ☐ | ☐ | ☐ | ☐ |
| 60. Demo ball securely attached to loadline with swivel-type connection | ☐ | ☐ | ☐ | ☐ |
| 61. Cranes operated safely (use crane checklist in HS-44) | ☐ | ☐ | ☐ | ☐ |
| **MATERIAL CHUTES (3.2.7)** | | | | |
| 62. Materials not dropped outside exterior walls unless area protected | ☐ | ☐ | ☐ | ☐ |
| 63. Chutes designed/constructed to withstand impact loads of debris | ☐ | ☐ | ☐ | ☐ |
| 64. Chutes entirely enclosed except of insertion points, openings closed when not used | ☐ | ☐ | ☐ | ☐ |
| 65. Gate provide at chute discharge, competent employee controls gate operation | ☐ | ☐ | ☐ | ☐ |
| 66. Signs and barricades installed around chute discharge | ☐ | ☐ | ☐ | ☐ |
| 67. Chute openings protected by guardrail where personnel stand to dump material | ☐ | ☐ | ☐ | ☐ |
| 68. Personnel not entering chute to remove items | ☐ | ☐ | ☐ | ☐ |
| 69. Toeboard provide in front of chute openings when mechanical equipment used to dump | ☐ | ☐ | ☐ | ☐ |
| **DEBRIS STORAGE (3.2.8)** | | | | |
| 70. Debris does not exceed allowable floor loads | ☐ | ☐ | ☐ | ☐ |
| 71. Wood floor structures, only one floor above grade removed for debris storage space | ☐ | ☐ | ☐ | ☐ |
| 72. Wood floor beams supporting walls left in place or equivalent support provided | ☐ | ☐ | ☐ | ☐ |
| 73. Floor arches not removed > 25' above grade for debris storage | ☐ | ☐ | ☐ | ☐ |
| 74. Storage spaces blocked off except when material is being removed | ☐ | ☐ | ☐ | ☐ |
| **HOUSEKEEPING (3.2.9)** | | | | |
| 75. Work areas, passageways, stairs, ladders, and exits kept free of demolition debris | ☐ | ☐ | ☐ | ☐ |
| 76. Demolition materials, tools, and equipment placed in an orderly manner | ☐ | ☐ | ☐ | ☐ |
| 77. Receptacles provided for disposal of miscellaneous trash | ☐ | ☐ | ☐ | ☐ |
| 78. Air, water, electrical, and welding lines positioned to eliminated tripping hazards | ☐ | ☐ | ☐ | ☐ |
| 79. Burning debris done according to local authorities | ☐ | ☐ | ☐ | ☐ |
| 80. All fires completely extinguished at least 1 hour before the end of the day's work | ☐ | ☐ | ☐ | ☐ |
| **OTHER ACTIVITIES ASSOCIATED WITH DEMOLITION (3.2.10)** | | | | |
| 81. Scaffolds erected and used safely (use scaffolds checklist in HS-25) | ☐ | ☐ | ☐ | ☐ |
| 82. Aerial lifts used safely (use aerial lift checklist in HS-41) | ☐ | ☐ | ☐ | ☐ |
| 83. Stairways and ladders used safely (use stairways and ladders checklist in HS-26) | ☐ | ☐ | ☐ | ☐ |
| 84. Control measures taken before welding/cutting on flammable/hazardous coatings | ☐ | ☐ | ☐ | ☐ |
| 85. Welding and cutting performed safely (use welding and cutting checklist in HS-63) | ☐ | ☐ | ☐ | ☐ |

**SECTION 3**

Complete this section for all items checked "No" in Sections 1 or 2. Deficient items must be corrected in a timely manner.

| Item # | Corrective Action Planned/Taken | Date Corrected |
|---|---|---|
| | | |
| | | |
| | | |

CH2MHILL

## H&S Self-Assessment Checklist - EARTHMOVING EQUIPMENT



This checklist shall be used by CH2M HILL personnel **only** and shall be completed at the frequency specified in the project's HSP/FSI.

This checklist is to be used at locations where: 1) CH2M HILL employees are potentially exposed to hazards associated with earthmoving equipment operations (complete Sections 1 and 3), and/or 2) CH2M HILL oversight of a earthmoving equipment subcontractor is required (complete entire checklist).

SSC/DSC may consult with earthmoving equipment subcontractors when completing this checklist, but shall not direct the means and methods of equipment operations nor direct the details of corrective actions. Earthmoving equipment subcontractors shall determine how to correct deficiencies and we must carefully rely on their expertise. Items considered to be imminently dangerous (possibility of serious injury or death) shall be corrected immediately or all exposed personnel shall be removed from the hazard until corrected.

Completed checklists shall be sent to the health and safety manager for review.

Project Name: _____ Project No.: _____

Location: _____ PM: _____

Auditor: _____ Title: _____ Date: _____

This specific checklist has been completed to:

☐ Evaluate CH2M HILL employee exposures to earthmoving equipment hazards
☐ Evaluate a CH2M HILL subcontractor's compliance with earthmoving equipment H&S requirements
Subcontractors Name: _____

- Check "Yes" if an assessment item is complete/correct.
- Check "No" if an item is incomplete/deficient. Deficiencies shall be brought to the immediate attention of the earthmoving equipment subcontractor. Section 3 must be completed for all items checked "No."
- Check "N/A" if an item is not applicable.
- Check "N/O" if an item is applicable but was not observed during the assessment.

Numbers in parentheses indicate where a description of this assessment item can be found in Standard of Practice HS-27.

| SECTION 1 | Yes | No | N/A | N/O |
|---|---|---|---|---|
| **PERSONNEL SAFE WORK PRACTICES (3.1)** | | | | |
| 1. Only authorized personnel operating earthmoving equipment | ☐ | ☐ | ☐ | ☐ |
| 2. Personnel maintaining safe distance from operating equipment | ☐ | ☐ | ☐ | ☐ |
| 3. Personnel and equipment operator in close communication when personnel must be in proximity of operating equipment | ☐ | ☐ | ☐ | ☐ |
| 4. Personnel approach operating equipment safely | ☐ | ☐ | ☐ | ☐ |
| 5. Personnel wearing high-visibility and/or reflective vests when close to operating equipment | ☐ | ☐ | ☐ | ☐ |
| 6. Personnel riding only in seats of equipment cab and using seat belts | ☐ | ☐ | ☐ | ☐ |
| 7. Personnel not positioned under hoisted loads | ☐ | ☐ | ☐ | ☐ |
| 8. Personnel not hoisted by equipment | ☐ | ☐ | ☐ | ☐ |
| 9. Personnel instructed not to approach equipment that has become electrically energized | ☐ | ☐ | ☐ | ☐ |
| 10. Personnel wearing appropriate PPE, per HSP/FSI | ☐ | ☐ | ☐ | ☐ |

| SECTION 2 | Yes | No | N/A | N/O |
|---|---|---|---|---|
| **GENERAL (3.2.1)** | | | | |
| 11. Daily safety briefing/meeting conducted with crew | ☐ | ☐ | ☐ | ☐ |
| 12. Daily inspection of equipment and equipment accessories conducted before use | ☐ | ☐ | ☐ | ☐ |
| 13. At least one fire extinguisher available at the equipment operating area | ☐ | ☐ | ☐ | ☐ |
| **EARTHMOVING EQUIPMENT COMPONENTS (3.2.2)** | | | | |
| 14. Backup alarm or spotter used when backing equipment | ☐ | ☐ | ☐ | ☐ |
| 15. Operational horn provided on bi-directional equipment | ☐ | ☐ | ☐ | ☐ |
| 16. Seat belts are provided and used | ☐ | ☐ | ☐ | ☐ |
| 17. Rollover protective structures (ROPS) provided | ☐ | ☐ | ☐ | ☐ |
| 18. Braking system capable of stopping full payload | ☐ | ☐ | ☐ | ☐ |
| 19. Headlights and taillights operable when additional light required | ☐ | ☐ | ☐ | ☐ |
| 20. Brake lights in operable condition | ☐ | ☐ | ☐ | ☐ |
| 21. Cab glass provides no visible distortion to the operator | ☐ | ☐ | ☐ | ☐ |
| 22. Hauling equipment (dump trucks) provided with cab shield or canopy | ☐ | ☐ | ☐ | ☐ |
| 23. Dump truck beds provided with positive means of support during maintenance or inspection | ☐ | ☐ | ☐ | ☐ |
| 24. Dump truck operating levers provided with latch to prevent accidental dumping | ☐ | ☐ | ☐ | ☐ |
| **EARTHMOVING EQUIPMENT PLACEMENT (3.2.3)** | | | | |
| 25. Location of underground utilities identified | ☐ | ☐ | ☐ | ☐ |
| 26. Safe clearance distance maintained while working under overhead powerlines | ☐ | ☐ | ☐ | ☐ |
| 27. Safe distance is maintained while traveling under powerlines | ☐ | ☐ | ☐ | ☐ |
| 28. Unattended equipment visibly marked at night | ☐ | ☐ | ☐ | ☐ |
| 29. Parking brake set when equipment parked and equipment chocked when parked on incline | ☐ | ☐ | ☐ | ☐ |
| **EARTHMOVING EQUIPMENT OPERATION (3.2.4)** | | | | |
| 30. Equipment operated on safe roadways and grades | ☐ | ☐ | ☐ | ☐ |
| 31. Equipment operated at safe speed | ☐ | ☐ | ☐ | ☐ |
| 32. Equipment not operated during inclement weather, lightning storms | ☐ | ☐ | ☐ | ☐ |
| 33. Using equipment to lift loads, other than earth, done according to equipment manufacturer specifications | ☐ | ☐ | ☐ | ☐ |
| 34. Lifting and hauling capacities are not exceeded | ☐ | ☐ | ☐ | ☐ |
| 35. Equipment components lowered when not in use | ☐ | ☐ | ☐ | ☐ |
| 36. All machine guards are in place | ☐ | ☐ | ☐ | ☐ |
| 37. Air monitoring conducted per HSP/FSI for hazardous atmospheres | ☐ | ☐ | ☐ | ☐ |
| **EARTHMOVING EQUIPMENT MAINTENANCE (3.2.5)** | | | | |
| 38. Defective components repaired immediately | ☐ | ☐ | ☐ | ☐ |
| 39. Suspended equipment or equipment parts are supported prior to work under or between | ☐ | ☐ | ☐ | ☐ |
| 40. Lockout/tagout procedures used prior to maintenance | ☐ | ☐ | ☐ | ☐ |
| 41. Tires on split rims removed using safety tire rack or cage | ☐ | ☐ | ☐ | ☐ |
| 42. Good housekeeping maintained on and around equipment | ☐ | ☐ | ☐ | ☐ |
| **EXCAVATING AT HAZARDOUS WASTE SITES (3.2.6)** | | | | |
| 43. Waste disposed of according to HSP | ☐ | ☐ | ☐ | ☐ |
| 44. Appropriate decontamination procedures being followed, per HSP | ☐ | ☐ | ☐ | ☐ |

**SECTION 3**

Complete this section for all items checked "No" in Sections 1 or 2. Deficient items must be corrected in a timely manner.

| Item # | Corrective Action Planned/Taken | Date Corrected |
|---|---|---|
| | | |
| | | |
| | | |

This checklist shall be used by CH2M HILL personnel **only** and shall be completed at the frequency specified in the project's HSP/FSI.

This checklist is to be used at locations where: 1) CH2M HILL employees enter excavations (complete Sections 1 and 3), and/or 2) CH2M HILL oversight of an excavation subcontractor is required (complete entire checklist).

SSC/DSC may consult with excavation subcontractors when completing this checklist, but shall not direct the means and methods of excavation operations nor direct the details of corrective actions. Excavation subcontractors shall determine how to correct deficiencies and we must carefully rely on their expertise. Items considered to be imminently dangerous (possibility of serious injury or death) shall be corrected immediately or all exposed personnel shall be removed from the hazard until corrected.

Completed checklists shall be sent to the health and safety manager for review.

Project Name: _____ Project No.: _____

Location: _____ PM: _____

Auditor: _____ Title: _____ Date: _____

This specific checklist has been completed to:

☐ Evaluate CH2M HILL employee exposures to excavation hazards
☐ Evaluate a CH2M HILL subcontractor's compliance with excavation H&S requirements
Subcontractors Name: _____

- Check "Yes" if an assessment item is complete/correct.
- Check "No" if an item is incomplete/deficient. Deficiencies shall be brought to the immediate attention of the excavation subcontractor. Section 3 must be completed for all items checked "No."
- Check "N/A" if an item is not applicable.
- Check "N/O" if an item is applicable but was not observed during the assessment.

Numbers in parentheses indicate where a description of this assessment item can be found in Standard of Practice HS-32.

| SECTION 1 | Yes | No | N/A | N/O |
|---|---|---|---|---|
| **PERSONNEL SAFE WORK PRACTICES (3.1)** | | | | |
| 1. Competent person has completed daily inspection and has authorized entry | ☐ | ☐ | ☐ | ☐ |
| 2. Personnel aware of entry requirements established by competent person | ☐ | ☐ | ☐ | ☐ |
| 3. Protective systems are free from damage and in stable condition | ☐ | ☐ | ☐ | ☐ |
| 4. Surface objects/structures secured from falling into excavation | ☐ | ☐ | ☐ | ☐ |
| 5. Potential hazardous atmospheres have been tested and found to be at safe levels | ☐ | ☐ | ☐ | ☐ |
| 6. Precautions have been taken to prevent cave-in from water accumulation in the excavation | ☐ | ☐ | ☐ | ☐ |
| 7. Personnel wearing appropriate PPE, per HSP/FSI | ☐ | ☐ | ☐ | ☐ |

| SECTION 2 | Yes | No | N/A | N/O |
|---|---|---|---|---|
| **GENERAL (3.2.1)** | | | | |
| 8. Daily safety briefing/meeting conducted with personnel | ☐ | ☐ | ☐ | ☐ |
| 9. Excavation and protective systems adequately inspected by competent person | ☐ | ☐ | ☐ | ☐ |
| 10. Defective protective systems or other unsafe conditions corrected before entry | ☐ | ☐ | ☐ | ☐ |
| 11. Guardrails provided on walkways over excavation 6' or deeper | ☐ | ☐ | ☐ | ☐ |
| 12. Barriers provided at excavations 6' or deeper when not readily visible | ☐ | ☐ | ☐ | ☐ |
| 13. Barriers or covers provided for wells, pits, shafts, or similar excavation 6' or deeper | ☐ | ☐ | ☐ | ☐ |
| 14. Excavating equipment operated safely (use earthmoving equipment checklist in HS-27) | ☐ | ☐ | ☐ | ☐ |
| **PRIOR TO EXCAVATING (3.2.2)** | | | | |
| 15. Location of underground utilities and installations identified | ☐ | ☐ | ☐ | ☐ |
| **EXCAVATING ACTIVITIES (3.2.3)** | | | | |
| 16. Rocks, trees, and other unstable surface objects removed or supported | ☐ | ☐ | ☐ | ☐ |
| 17. Exposed underground utility lines supported | ☐ | ☐ | ☐ | ☐ |
| 18. Undermined surface structures supported or determined to be in safe condition | ☐ | ☐ | ☐ | ☐ |
| 19. Warning system used to remind equipment operators of excavation edge | ☐ | ☐ | ☐ | ☐ |
| **EXCAVATION ENTRY (3.2.4)** | | | | |
| 20. Trenches > 4' deep provided with safe means of egress within 25' | ☐ | ☐ | ☐ | ☐ |
| 21. Structure ramps designed and approved by competent person | ☐ | ☐ | ☐ | ☐ |
| 22. Potential hazardous atmospheres tested prior to entry | ☐ | ☐ | ☐ | ☐ |
| 23. Rescue equipment provided where potential for hazardous atmospheres exists | ☐ | ☐ | ☐ | ☐ |
| 24. Ventilation used to control hazardous atmospheres and air tested frequently | ☐ | ☐ | ☐ | ☐ |
| 25. Appropriate respiratory protection used when ventilation does not control hazards | ☐ | ☐ | ☐ | ☐ |
| 26. Precautions taken to prevent cave-in from water accumulation in the excavation | ☐ | ☐ | ☐ | ☐ |
| 27. Precautions taken to prevent surface water from entering excavation | ☐ | ☐ | ☐ | ☐ |
| 28. Protection provided from falling/rolling material from excavation face | ☐ | ☐ | ☐ | ☐ |
| 29. Spoil piles, equipment, materials restrained or kept at least 2' from excavation edge | ☐ | ☐ | ☐ | ☐ |
| **EXCAVATION PROTECTIVE SYSTEMS (3.2.5)** | | | | |
| 30. Protective systems used for excavations 5' or deeper | ☐ | ☐ | ☐ | ☐ |
| 31. Protective systems for excavation deeper than 20' designed by registered PE | ☐ | ☐ | ☐ | ☐ |
| 32. If soil unclassified, maximum allowable slope is 34 degrees | ☐ | ☐ | ☐ | ☐ |
| 33. Protective systems free from damage | ☐ | ☐ | ☐ | ☐ |
| 34. Protective system used according to manufacturer recommendations and not subjected to loads exceeding design limits | ☐ | ☐ | ☐ | ☐ |
| 35. Protective system components securely connected to prevent movement or failure | ☐ | ☐ | ☐ | ☐ |
| 36. Cave-in protection provided while entering/exiting shielding systems | ☐ | ☐ | ☐ | ☐ |
| 37. Personnel removed from shielding systems when installed, removed, or vertical movement | ☐ | ☐ | ☐ | ☐ |
| **PROTECTIVE SYSTEM REMOVAL (3.2.6)** | | | | |
| 38. Protective system removal starts and progresses from excavation bottom | ☐ | ☐ | ☐ | ☐ |
| 39. Protective systems removed slowly and cautiously | ☐ | ☐ | ☐ | ☐ |
| 40. Temporary structure supports used if failure of remaining components observed | ☐ | ☐ | ☐ | ☐ |
| 41. Backfilling taking place immediately after protective system removal | ☐ | ☐ | ☐ | ☐ |
| **EXCAVATING AT HAZARDOUS WASTE SITES (3.2.7)** | | | | |
| 42. Waste disposed of according to HSP | ☐ | ☐ | ☐ | ☐ |
| 43. Appropriate decontamination procedures being followed, per HSP | ☐ | ☐ | ☐ | ☐ |

**SECTION 3**

Complete this section for all items checked "No" in Sections 1 or 2. Deficient items must be corrected in a timely manner.

| Item # | Corrective Action Planned/Taken | Date Corrected |
|---|---|---|
| | | |
| | | |
| | | |

# CH2M HILL FIELD SAFETY INSTRUCTIONS

## Attachment 7

## Applicable Material Safety Data Sheets